AV-RA Series

Thermal Dispersion Fan Inlet Sensor Airflow Measuring System

Overview

The AV-RA Series averages velocity and temperature from fan inlet sensors in a duct or plenum, providing accurate, dependable airflow measurement from 0 to 10,000 fpm (0 to 50.8 mps) within ±2% accuracy. Each sensor circuit is connected to a router that stores the calibration data. The router's microprocessor calculates flow and temperature and sends this information digitally to the AV-DMPR-RA003 Electronic Controller, which provides air velocity and temperature information on an LCD screen. The transmitter sends the output to a Building Automation System (BAS) through 4 to 20 mA or 2 to 10 VDC analog outputs (using a 500 ohm resistor) or a 1 to 5 VDC analog output (using a 250 ohm resistor).

Applications

- Averages velocity and temperature from fan inlet sensors in a duct or plenum, providing accurate, dependable airflow measurement

Features & Benefits

- Aerodynamically Shaped, Surface Mount
- Fan Inlet Sensors
- Multiple-Pivot Hinge Design
- Built-in Balance Mode
- LCD Screen on AV-DMPR-RA003 Electronic Controller
- CAT5e Cable with RJ-45 Connectors

Model Selection

		AV-RA	F	dd	D	O
Fan Type[1]	F = Forward Curve B = Backward Curve P = Plenum / Plug					
Plenum Diameter	dd = diameter of plenum (4 to 50 inches in 1-inch increments)					
Inlet Type and Sensor Density[2]	D = Double Inlet Standard Density / Single Inlet High Density H = Double Inlet High Density N = Single Inlet Standard Density					
Cable Length	O = 20 ft (6 m) P = 30 ft (9 m) Q = 40 ft (12 m) R = 50 ft (15 m)					

Notes:

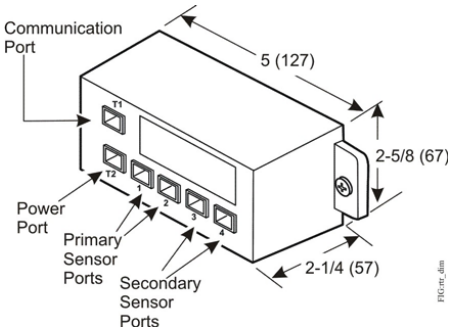
1. If you are not sure of the fan type, select backward or plenum. The accompanying mounting brackets work on any of the three fan types. The AV-RA Series products do not work on vane axial or propeller fan types.
2. Standard Density is 2 sensors per inlet (recommended). If you are unable to mount the sensors on one side of the system, measure the other side and double the area. High Density is 4 sensors per inlet.

Product Specifications

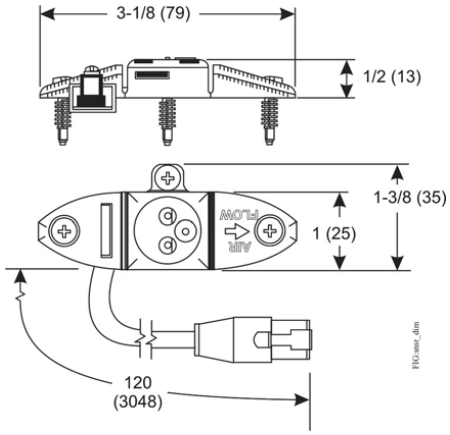
Velocity Requirements	Minimum 0 fpm (0 mps)
	Maximum 10,000 fpm (50.8 mps)
Fan Degradation	Minimal
Sensor Accuracy	Airflow: ±2% of reading and ±0.15% repeatability
	Temperature: ±0.10°F
	24 VAC internally fused power supply
	Velocity Output: 4 to 20 mA (Standard) or 2 to 10 VDC (requires 500-ohm resistor)
	Temperature Output: 4 to 20 mA (Standard) or 2 to 10 VDC (requires 500-ohm resistor)
	Fused outputs
Power Requirement	Dedicated 24 V, 20 VA with one router
	connected and 40 VA with two routers connected
Power Consumption	18 VA Maximum per router
Operating Conditions	-25 to 140°F (-32 to 60°C); 0-99% RH, noncondensing
Router Unit (One per Fan Location)	One microprocessor based multiplexer circuit
	Sensor/communications circuit
	Router circuits encapsulated in electronic potting compound
Approximate Weight:	
Controller	2.9 lb (1.32 kg)
Router	1 lb (0.45 kg)
Sensor	0.5 lb (0.22 kg)

Dimensions

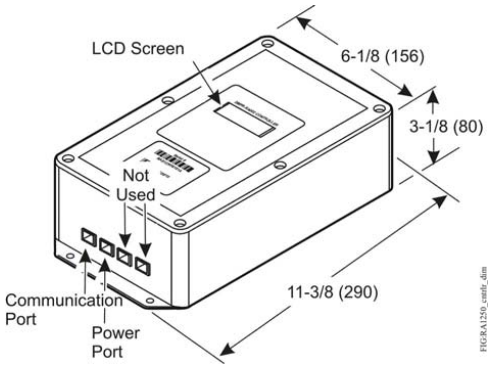
Fan Inlet Dimensions	
Size Limits	Diameter, inches (mm)
Minimum	12 (305)
Maximum	44 (1118)



Router Dimensions, in. (mm)



Fan Inlet Sensor Dimensions, in. (mm)



AV-DMPR-RA003 Electronic Controller Dimensions, in. (mm)